



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,813	11/22/2002	Charles E. Baumgartner	RD 28,668	9639
6147	7590	10/05/2005	EXAMINER	
GENERAL ELECTRIC COMPANY GLOBAL RESEARCH PATENT DOCKET RM. BLDG. K1-4A59 NISKAYUNA, NY 12309			ADDISON, KAREN B	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

JK

<b>Office Action Summary</b>	Application No. 10/065,813	Applicant(s) BAUMGARTNER ET AL.	
	Examiner Karen B Addison	Art Unit 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2005.  
 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 11-28 is/are pending in the application.  
     4a) Of the above claim(s) 1-10 is/are withdrawn from consideration.  
 5) ☒ Claim(s) 17-28 is/are allowed.  
 6) ☒ Claim(s) 11 and 13-16 is/are rejected.  
 7) ☐ Claim(s) 12 is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments, see page 10-11, filed 4/18/2005, with respect to the rejection(s) of claim(s) 11-16 under USC 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Friemel(6537220) in view of Robinson(6659954).

### ***Allowable Subject Matter***

1. Claims 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
2. Claims 17-28 are allowed.
3. Prior art fails to show, conductive pads of the first and second electrical conductors being separated from each other by a gap that is substantially coplanar with the gap between the first and second ultrasonic transducer elements. Prior art also fails to show the conductor pads formed on the front face of the acoustic backing layers and in electrical contact with an opposing rear face of the respective ultrasonic transducer element; wherein each of the conductor comprises conductive traces deposited on a respective via-shaped structure in the acoustic backing layer, connected to respective conductive pads and exposed at the rear face of the acoustic backing layer; and no part of the common ground connection passes through the acoustic backing material. As indicated in the last office action issue on 1/11/05.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11,13,14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frienmel(6537220) in view of Robinson(6659954).

Frienmel discloses a ultrasonic transducer in figs. 1-3 comprising: an array comprising: an array (100) of piezoelectric transducer elements (200) and an acoustic backing layer(508) acoustically coupled to the rear face of each of the piezoelectric transducer elements, the acoustic backing layer(4) having a matching layers(504,506) with a plurality of via-shaped internal structures( 572), each of the via-shaped internal structures having a deposit of electrically conductive material(570) thereon. Wherein, the piezoelectric transducer elements (200) and confronting portions of the acoustic backing layer(508) are isolated by a grid (fig2) comprising a first plurality of spaced kerfs (202) disposed parallel to the first elevational plane (fig.4) and a second plurality of spaced kerfs disposed parallel to a second elevational plane (fig.4) substantially orthogonal to said first elevational plane. Frienmel also discloses, the matching layers having substantially the same composition wherein, the piezoelectric transducer(200) comprise a thin layer of electrically conductive material(560) in contact with the electrodes on the front face of the piezoelectric transducer(200) and electrically connected to ground.

Wherein the matching material (504,506) have a thin layer of electrically conductive material of the surface layer of acoustic matching material. Friemel does not show a specific body of acoustically attenuative material that supports the substrate(none as backing) and electrical connections.

Robinson discloses a ultrasonic transducer in fig.8 having an ultrasonic array on a substrate #34(none as the backing layer) having electrically connection(inherent or the device is useless) connected to the ultrasound transducer array(30) and a body of acoustically material(33)that supports the substrate(none as the matching layer) and electrically connections. Wherein the acoustically attenuative material(33) filling the bounded volumes(37) and layers have the substantially the same composition for the purpose of reducing the effect of parasitic capacitances therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ an acoustically attenuative material of Robinson into device of Freimel to ensure the active area of the device is not subject to unwanted reflective waves..

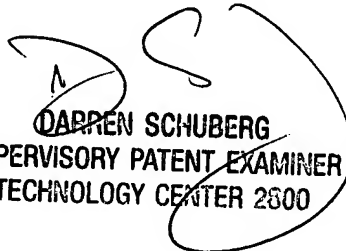
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karen B. Addison whose telephone number is 571-272-2017. The examiner can normally be reached on 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KBA  
9/29/05

  
DARREN SCHUBERG  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800